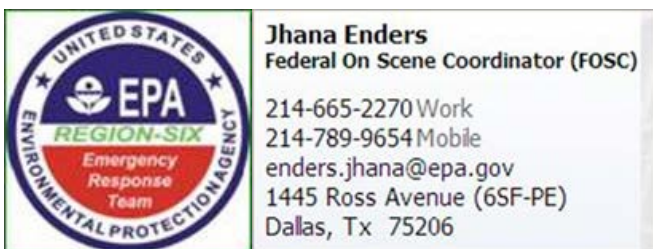


**From:** [Enders, Jhana](#)  
**To:** [Martin, Thomas](#); [Bojes, Heidi \(DSHS\)](#); [May, Shaun](#)  
**Cc:** [Jaramillo, Jeanie](#); [Turner, Phillip](#)  
**Subject:** Final Data and Summary Table  
**Date:** Monday, April 24, 2017 4:58:00 PM  
**Attachments:** [image011.png](#)  
[image012.png](#)  
[image014.png](#)  
[FinalData.pdf](#)  
[SummaryTable.pdf](#)  
[image004.png](#)

---

Sorry for the late response, I have been in Louisiana responding to an oil spill and just got back to the office. Attached is a copy of the final data. As we discussed previously, the final numbers are no different than the preliminary data which you already received. I've also included a summary table which I think will address the question below however, if we need to discuss further, I can set up a conference call. Just let me know. Thanks.



---

**From:** Martin, Thomas [mailto:thomas.martin@ttuhsc.edu]

**Sent:** Wednesday, April 19, 2017 10:56 AM

**To:** Enders, Jhana ; Bojes, Heidi (DSHS) ; May, Shaun

**Cc:** Jaramillo, Jeanie

**Subject:** RE: Air Monitoring Discussion

Jhana & Heidi,

Was there no concern about possible contamination by phosphorus in the collection containers for samples collected on 1/28?

Tom

*Thomas G. Martin, MD, MPH, FACMT, FAACCT, FACEP*

Medical Director

Texas Panhandle Poison Center

Texas Tech University Health Sciences Center

1300 S. Coulter, #105

Amarillo, TX 79106

Office 806 414-9749

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**From:** Enders, Jhana [Enders.Jhana@epa.gov]

**Sent:** Monday, April 10, 2017 4:58 PM

**To:** Bojes, Heidi (DSHS); Martin, Thomas; May, Shaun

**Subject:** Air Monitoring Discussion

Heidi,

Chris forwarded me your email. As I reported previously, EPA did not conduct any air monitoring or sampling in the home prior to cleanup/remediation however, I can offer the following;

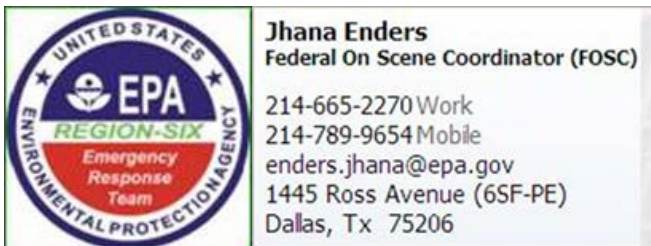
01/02/17 - EPA arrived onsite but could not access the home as it was locked. Perimeter monitoring outside the home and surrounding neighborhood was conducted with all readings <0.1 ppm

01/03/17 - EPA and TCEQ teams were at the city EOC all day in discussions with the city and planning for decon of the dogs which happened later in the day outside in the backyard. No indoor air monitoring was conducted.

01/04/17 – TCEQ Contractors began Cleanup/Remediation. TCEQ contractor conducted air monitoring with EPA equipment as they did not have phosphine sensors and other necessary detection equipment. The information reported to me is below.

**January 4, 2017**, Entry was made a number of times inside the house and exterior crawl space beneath the house by the SWS contractor. One deceased pet cat, one 3.0 oz container of d-CON Rodenticide pellets, one 100 mL bottle of Bovitraz (insecticide), a plastic spray bottle containing a purple liquid, and a plastic bottle containing a powdery substance were recovered. SWS documented average air monitoring readings during the entries utilizing the MiniRAE 3000 ranged from 0.2 ppm to 1.0 ppm, Drager CMS were less than 0.1 ppm, and VRAE readings were less than 0.1 ppm. SWS reported area air monitoring utilizing the Drager CMS were less than 0.1 ppm, and VRAE readings were less than 0.1 ppm. EPA and TCEQ were notified the property owner had sprayed an insecticide on mattresses inside the house so entry was made in order to screen the mattresses and other sleeping areas for VOC readings. SWS reported average VOC readings in the sleeping areas ranged from 0.1 ppm to 0.2 ppm, two mattresses sealed in poly sheeting were observed in a bedroom, and VOC readings ranged from 0.6 ppm and 2.8 ppm, VRAE readings for phosphine on the two poly sealed mattresses ranged from 0.2 ppm to 0.3 ppm. Approximately one gallon of soil containing partially spent residual dust from the Weevil-Cide pellets was removed from the crawlspace and transferred to a five-gallon bucket. SWS conducted headspace readings on the bucket utilizing the VRAE, and readings were greater than 20 ppm, a headspace reading of the Bovitraz was also collected, and VOC readings were documented at 145 ppm. SWS conducted air monitoring inside the house as well as area monitoring for phosphine and VOCs at upwind and downwind locations of the site utilizing MiniRae 3000s calibrated for phosphine, VRAE with phosphine sensor, and Drager CMS unit with phosphine chips (0.1 ppm to 2.5 ppm range). The Amarillo Police Department continues to provide site security.

01/05/17 – The EPA Team took over all air monitoring - inside and out . The only sampling done was the confirmation sampling on 01.28.17.



**From:** Bojes, Heidi (DSHS) [<mailto:Heidi.Bojes@dshs.texas.gov>]

**Sent:** Thursday, April 06, 2017 12:51 PM

**To:** Ruhl, Christopher <[Ruhl.Christopher@epa.gov](mailto:Ruhl.Christopher@epa.gov)>

**Subject:** FW: Sampling Discussion (City of Amarillo)

Chris,

Do you know what levels of phosphine gas were detected in the home prior to remediation? We are trying to get a better understanding of what first responders may have been exposed to.

Do you have any sampling data collected from the home before remediation was conducted?

Thanks,

Heidi

Heidi Bojes, PhD, MPH  
Director, Environmental Epidemiology and Disease Registries Section  
Texas Department of State Health Services  
Direct: (512) 776-6351  
Cell: (512) 289-0871

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**From:** Bojes, Heidi (DSHS)

**Sent:** Thursday, April 6, 2017 11:17 AM

**To:** 'Enders, Jhana' <[Enders.Jhana@epa.gov](mailto:Enders.Jhana@epa.gov)>; Young, Patrick <[young.patrick@epa.gov](mailto:young.patrick@epa.gov)>

**Cc:** Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** RE: Sampling Discussion (City of Amarillo)

Jhana,

Do we know what the initial monitoring results were when they did start?

Thanks,

Heidi

Heidi Bojes, PhD, MPH  
Director, Environmental Epidemiology and Disease Registries Section  
Texas Department of State Health Services  
Direct: (512) 776-6351  
Cell: (512) 289-0871

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**From:** Enders, Jhana [<mailto:Enders.Jhana@epa.gov>]

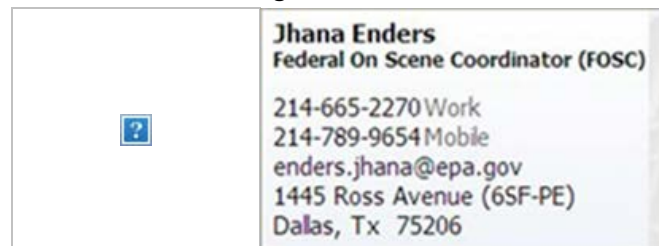
**Sent:** Wednesday, April 5, 2017 5:02 PM

**To:** Bojes, Heidi (DSHS) <[Heidi.Bojes@dshs.texas.gov](mailto:Heidi.Bojes@dshs.texas.gov)>; Young, Patrick <[young.patrick@epa.gov](mailto:young.patrick@epa.gov)>

**Cc:** Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** RE: Sampling Discussion (City of Amarillo)

We started monitoring and remediation at the same time...



**From:** Bojes, Heidi (DSHS) [<mailto:Heidi.Bojes@dshs.texas.gov>]

**Sent:** Wednesday, April 05, 2017 2:41 PM

**To:** Enders, Jhana <[Enders.Jhana@epa.gov](mailto:Enders.Jhana@epa.gov)>; Young, Patrick <[young.patrick@epa.gov](mailto:young.patrick@epa.gov)>

**Cc:** Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** RE: Sampling Discussion (City of Amarillo)

Hi Jhana,

Do you know what were the monitoring results prior to remediation?

Thanks,

Heidi

Heidi Bojes, PhD, MPH

Director, Environmental Epidemiology and Disease Registries Section

Texas Department of State Health Services

Direct: (512) 776-6351

Cell: (512) 289-0871

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---

**From:** Enders, Jhana [<mailto:Enders.Jhana@epa.gov>]

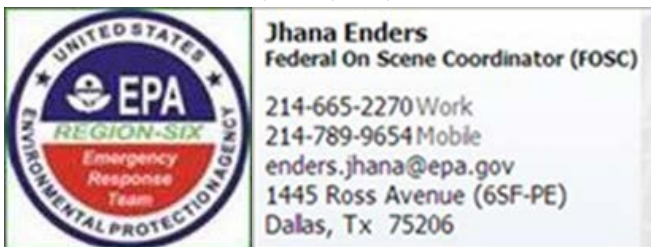
**Sent:** Wednesday, April 5, 2017 2:26 PM

**To:** Young, Patrick <[young.patrick@epa.gov](mailto:young.patrick@epa.gov)>; Bojes, Heidi (DSHS) <[Heidi.Bojes@dshs.texas.gov](mailto:Heidi.Bojes@dshs.texas.gov)>

**Cc:** Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** RE: Sampling Discussion (City of Amarillo)

We did not collect any samples prior to remediation – only air monitoring.



---

**From:** Young, Patrick

**Sent:** Wednesday, April 05, 2017 11:04 AM

**To:** Bojes, Heidi (DSHS) <[Heidi.Bojes@dshs.texas.gov](mailto:Heidi.Bojes@dshs.texas.gov)>

**Cc:** Enders, Jhana <[Enders.Jhana@epa.gov](mailto:Enders.Jhana@epa.gov)>; Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** Re: Sampling Discussion (City of Amarillo)

Never seen any data. We will need to speaker with EPA. I will ask Jhana.

Patrick

Sent from my iPhone

On Apr 5, 2017, at 8:44 AM, Bojes, Heidi (DSHS) <[Heidi.Bojes@dshs.texas.gov](mailto:Heidi.Bojes@dshs.texas.gov)> wrote:

Hi Patrick,

Do you have any sampling data collected from the home before remediation was conducted?

What were the initial levels of the phosphine gas?

Thanks,

Heidi

Heidi Bojes, PhD, MPH

Director, Environmental Epidemiology and Disease Registries Section

Texas Department of State Health Services

Direct: (512) 776-6351

Cell: (512) 289-0871

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**From:** Young, Patrick [<mailto:young.patrick@epa.gov>]

**Sent:** Thursday, February 16, 2017 7:16 AM

**To:** May, Shaun <[Shaun.May@amarillo.gov](mailto:Shaun.May@amarillo.gov)>; 'Milton, S' <[s.milton@ttuhsc.edu](mailto:s.milton@ttuhsc.edu)>;  
Bojes, Heidi (DSHS) <[Heidi.Bojes@dshs.state.tx.us](mailto:Heidi.Bojes@dshs.state.tx.us)>; 'Martin, Thomas'  
<[thomas.martin@ttuhsc.edu](mailto:thomas.martin@ttuhsc.edu)>; Turner, Philip <[Turner.Philip@epa.gov](mailto:Turner.Philip@epa.gov)>

**Cc:** Pettigrew, George <[pettigrew.george@epa.gov](mailto:pettigrew.george@epa.gov)>

**Subject:** RE: Sampling Discussion (City of Amarillo)

Okay everyone!! I finally found the clarity that I was seeking that should better explain what we are dealing with as far as indoor air exposures to the public based on occupational values we have derived. EPA put together an extremely useful visual aid that lumps in occupational, acute, short term, subchronic, chronic and general public exposures all in one visual aid. On the viewer its page 177; the document page is 170 for Phosphine. Hopefully this will help assist in making the health call on when it is safe to reoccupy the residence.

CAPT Patrick Young, RS, MS

U.S. Public Health Service

ATSDR R6 Regional Rep

Division of Community Health Investigation

Dallas, Texas

214-665-8562 (o)

-----Original Appointment-----

**From:** May, Shaun [<mailto:Shaun.May@amarillo.gov>]

**Sent:** Friday, February 10, 2017 3:42 PM

**To:** May, Shaun; 'Milton, S'; Bojes, Heidi (DSHS); Young, Patrick; 'Martin, Thomas';  
Turner, Philip

**Subject:** Tentative hold for Final Sampling Discussion (City of Amarillo)

**When:** Wednesday, February 15, 2017 3:00 PM-4:00 PM (UTC-06:00) Central Time (US & Canada).

**Where:** Conf Call - Call-in Number (b) (6) Access Number (b) (6)

When: Wednesday, February 15, 2017 3:00 PM-4:00 PM (UTC-06:00) Central Time (US & Canada).

Where: Conf Call - Call-in Number (b) (6) Access Number (b) (6)

Note: The GMT offset above does not reflect daylight saving time adjustments.

\*~\*~\*~\*~\*~\*~\*~\*~\*~\*

Discussion about final sampling results

**\*Please note\*** My email address has changed to reflect @dshs.texas.gov domain.  
Please be sure to update your contact information with the new address.

**\*Please note\*** My email address has changed to reflect @dshs.texas.gov domain. Please be sure to update your contact information with the new address.

**\*Please note\*** My email address has changed to reflect @dshs.texas.gov domain. Please be sure to update your contact information with the new address.